

# COMBINATION OF COLD LASER THERAPY, ULTRASOUND THERAPY WITH EXERCISE FOR LATERAL EPICONDYLITIS- CASE STUDY APPROACH

## ABSTRACT

The objective of the study was to explore the effects of Cold laser therapy, ultrasound therapy and exercises to lateral epicondylitis as clinical outcome

25 year old young man working as software engineer came to physiotherapy treatment, with 10 days of elbow pain which is a gradual onset. Pain was aggravated by lifting weights, continuous use of keyboard and mouse .he found some relief with ice application. He came for permanent relief.

## Introduction

Tennis elbow is a kind of tendinitis,affecting common extensor origin in elbow and resulting in pain around elbow especially in the lateral aspect of elbow with or without radiating in nature.

## Causes

Apart from tennis like sports, repeated gripping work resulting in tendinitis

Tennis.

Squash.

Cricket

Weight lifters

Carpentary

Typing

Painting

Knitting

Writers ...etc

## Symptoms

Pain in ADL which involving elbow and wrist movemenets like gripping,lifting,squeezing.

Swelling in elbow lateral aspect sometime in upper forearm

## **Diagnosis**

Mills test

Cozen's sign

## **Treatment;**

Cold laser therapy

Apparatus

Company .Technomedscanning laser unit

Pulsed mode,8joule

Duration 10 minutes

Ultrasound therapy;

Company;Technomed ultrasound therapy unit

Pulsed mode

3mhz

1,5w

5 minutes

Duration of treatment days

4 to5 days

## **Exercises**

It can be practised daily from day2 to2 wks

### **Finger stretch:**

Touch fingers to thumb and put a rubber band around them, including thumb.

Slowly open thumb and fingers all the way, then close them.

Repeat up to 25 times.

### **Ball squeeze:**

Hold a tennis ball or soft rubber ball in hand

Squeeze and release up to 25 times



**Wristflexor stretch:**

Hold arm straight out so elbow isn't bent and palm faces up.

Use other hand to hold the fingers of outstretched hand and bend it. back toward body until feel it in inner forearm.

Hold for 15 seconds.

Repeat three to five times.

**Wrist extensor stretch:**

This is just like the last stretch, but palm faces down instead of up:

Hold arm straight out so elbow isn't bent and palm faces down.

Use other hand to hold the fingers of outstretched hand and bend it back toward body until feel it in outer forearm.

Hold for 15 seconds.

Repeat three to five times.

**Wrist turn:**

Bend elbow at a right angle by side so it forms an L.

Hold hand out palm up.

Gently turn wrist so palm faces down.

Hold for 15 seconds.

Repeat three to five times.

**Forearm strengthening:**

Grab a 1-pound dumbbell -- or a tool like a hammer or wrench -- and take a seat.

Support forearm on thigh or the edge of a table so that wrist. hangs over the edge.

Grasp the bottom of the dumbbell -- not the middle, as usual.

Slowly turn hand so palm faces up. Make sure to only move forearm, not elbow.

Slowly turn palm to the ground.

Repeat 10 times.

**Eccentric and concentric exercises:**

Start with a 0.5/ 1-kg dumbbell and sit on a chair at a table that has an edge.

Bend the elbow to 90°; palm should be facing the floor. Slowly lower the weight, then slowly raise. This may be painful, but raise and lower the weight 10 times or upto tolerance

Rest a few minutes.

Fully straighten the elbow flat across the table, with palm facing the floor. Slowly lower and raise the weight 10 times.

When the 10 repetitions have become easy to do, increase the weight by 1 or 2 kgs. .

### **Outcome;**

Patient completely rid of pain .and he came for review after 10 days.He did not get back the pain and discomfort

### **ASSESSMENT**

#### **SUBJECTIVE ASSESSMENT**

Patient is complaining of pain in lateral aspect of right elbow and radiated to 3 rd and 4th extensor compartment. Pain increased with elbow movement and forearm movement. And also pain increased with resisted wrist extension.

Assessment was well detailed with tendinopathy tool kit and visual analogue scale{VAS}

#### **OBJECTIVE ASSESSMENT**

Palpation shows tenderness in lateral epicondyle area

No abnormality found in Cervical spine range of movement, shoulder girdle range of movement.

No neurological symptoms

No muscle injury or atrophy

No bony abnormalities

Radiology shows normal study

### **Inclusion criteria**

Acute tendinitis not less than 2 weeks

Work related pain

Age group 20 – 30yrs

### **Exclusion criteria**

Injuries around shoulder ,elbow,wrist

Neurological injuries like acute stroke, brachial plexus injuries.

Pregnancy

Autoimmune disorder

Conjenital anamolies

## CLINICAL HYPOTHESIS

Based on initial evaluation clinical hypothesis is Lateral epicondylitis

To confirm pain free grip test was done with Thomson test and Maudsley test.

VAS scale used to measure pain.

### Pain-free grip strength (PFGS)

Using a hand held dynamometer such as a Jamar, the patient is instructed to squeeze slowly until they begin to feel discomfort. Both the physiotherapist and patient should be unable to read the dial of the dynamometer during testing. The pain free grip strength is measured 3 times, with a 20-second rest interval between each measurement. Record the mean value of 3 efforts. The research for this test was done with the elbow at 0° but could be done with the elbow at 90° if grip is very painful.

Pain grip strength(2) free trial done with 8kg, 9kg, 7kg

### Thomsen Test

With the shoulder flexed to 60°, the elbow extended, the forearm pronated and the wrist extended about 30°, pressure is applied to the dorsum of the second and third metacarpal bones in the direction of flexion and ulnar deviation to stress the extensor carpi radialis brevis and longus. A positive test is pain elicited in the region of the lateral epicondyl

positive pain scale 7/10

### Maudsley Test

Resisted extension of the middle finger with the elbow extended. A positive test causes pain in the region of the lateral epicondyle.

Both the Thomsen and Maudsley tests can be measured using a hand held dynamometer. The score should be the mean of three readings of the amount of pressure needed for the patient to start to feel discomfort.

Positive painscale 8/10

## INTERVENTION

Patient was given scanning cold laser for 10 minutes followed by 3 mhz, pulsed mode ultrasound massage therapy for 2 minutes.

Patient was instructed about the exercises in the form of stretching exercise isometrics strengthening exercise for elbow, forearm and wrist. More consideration given to extensor muscles of the same .exercise session for 20 minutes after physical modality

After 5days of treatment session, follow up taken .definitely pain was reduced which was assessed again with pain free grip strength with Thomson test and Maudsley test

Pain free grip strength free trial done 20kg,22kg,21kg

Thombson and maudsley test negative.

Functionally patient was improved .pain gradually reduced proved by VAS scale and at the end of 5 days it was 1/10

## DISCUSSION

In this young software person, combination of Cold laser therapy, Ultrasound therapy and exercise protocol reduces pain very much

## REFERENCES

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